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EVERY FRIDAY

Autosport

BRITAIN'S MOTOR SPORTING WEEKLY

THIS WEEK

PENYA RHIN
GRAND PRIX

CASE HISTORY OF THE
16-VALVE MASERATI

by
NORMAN SMITH

JOHN BOLSTER'S
EARLS COURT
COMMENTARY

Vol. I No. 11
November 3, 1950





gay deceiver

You've heard incredible stories about this car — stories of International race triumphs; unbelievably high average speeds. And frankly you're doubtful.

Now as you inspect her close up, you still think it can't be. She looks so comfortable, even sedate... so harmless somehow. Can that neat tapering bonnet house such formidable power?

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Autosport

BRITAIN'S MOTOR SPORTING WEEKLY

Incorporating "THE MOTOR CLUB"

Managing Editor: GREGOR GRANT

Vol. I No. II

November 3, 1950

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NOTICES

Published every Friday by AUTOSPORT,
 32 Great Windmill Street, London, W.1.
 Tel. GERard 3193

NORTHERN OFFICE,
 65 South John Street, Liverpool, 1.
 Tel. ROYal 1248

Business Manager: JOHN S. CAMPBELL
 Advertisement Manager: NORMAN H. BIGSBY

Annual Subscription: £2 5s. 6d.
 Direct from the Publishers or all Newsagents

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EDITORIAL

THE failure of the two B.R.M.s at Penya Rhin gives emphasis to the considerable amount of work that remains to be done before the cars are ready for full-scale Grand Prix racing. So much bally-hoo has been circulated concerning speeds of 200 m.p.h. and so on, that it was a shock to the many British visitors to see the unsupercharged, 4½-litre Ferraris apparently going faster on the straights. This winter must be devoted to the job of making the B.R.M. fast *and* reliable. Despite stories of Alfa-Romeo non-participation in next year's Grands Prix, AUTOSPORT feels certain that the new flat-twelve Alfas will make an appearance. With both Alfa and Ferrari with which to contend, to say nothing of Talbot, Simca and possibly Mercedes-Benz, the B.R.M. house must be set in order now. The "Big Boss" should be appointed immediately, and the money necessary to continue development work made available by all possible means.

* * *

JERSEY has played a most important part in the revival of motor racing since the war. The island spared nothing to see that all possible facilities were made available to stage a proper International road race. In order that the organization side could be perfected, the enterprising Jersey M.C. and L.C.C. called in officials of the experienced B.A.R.C. (late J.C.C.). As a result of close co-operation between the clubs, the Jersey road race became a most successful event.

Now wouldn't it be a grand thing if the States of Jersey was permitted to re-name its annual race, the Jersey, or even Channel Islands Grand Prix? Although the organizing club comes within the jurisdiction of the R.A.C., and is therefore unable to name its race officially as a Grand Prix, it would be both a compliment and a way of saying "thank you" if the term could be employed.

Naturally we deplore the haphazard labelling of races as Grands Prix, but in the case of the Jersey event, we believe that there is every justification for using this important title. The status of the event, high as it is, would be raised even higher, and there is no reason to suppose that it would not eventually become as important as its counterpart in the South of France, the Monaco Grand Prix.

Both events have much in common in that they are organized by what are virtually self-governing countries. Monaco is, of course, a Principality, but the States of Jersey has its own Governor, and the power to close its own roads for motor racing.

OUR COVER PICTURE

UP SHE GOES—But not quite! A George Phillips shot of Godfrey Imhof and Tom Lush just failing to surmount the unclimbed section of Old Lees in the recent "High Peak".

Pit and Paddock

JAGUAR XK 120, in a high-speed demonstration at Montlhéry on 24th October, covered 2,579.16 miles in 24 hours, averaging 107.46 m.p.h. The last hour was accomplished at 112.4 m.p.h. Drivers were Leslie Johnson (owner) and Stirling Moss.

* * *

SHOW-TIME party thrown at Robin Hill, Kingston-on-Thames, by Godfrey and Nina Imhof was a bright affair. Guests included Mr. and Mrs. John Heath, Mr. and Mrs. Sidney Allard, Mr. and Mrs. John Cooper, Mr. and Mrs. Eddie Daniel, Alan Rogers, Raymond Baxter, Gordon Wilkins, Joe Lowrey and your Editor. A fortune-teller added spice to the party, but not to the peace of mind of several folk.

* * *

MANY readers have inquired about bound volumes of AUTOSPORT. Volume One will be complete with the 29th December number (nineteen issues), and thereafter there will be twenty-six issues per volume. Readers supplying their own copies may have them bound in red cloth with gold lettering at a cost of 12s. 6d. per volume (post free). A limited number of already-bound volumes will be available at £1 1s. Our advice is to place an order as soon as possible.

* * *

HHEADACHE for officials of the Sheffield and Hallamshire M.C. was the definition of cars available for the standard car award in the recent "High Peak". Ron Lowe (Dellow) would have won but for the fitting of prototype helical springs on the rear. Dennis Dent was excluded at the start from this award because his tourer Allard had a bracket for an air-bottle welded on the back. Apparently if the air-bottle was carried loose, the car would have reverted to standard. What a life!

* * *

THAT famous old Austin Seven that flies around London with "Eat at Joe's" painted on the back has a rival. A dreadfully-dilapidated fabric saloon was seen the other day in Piccadilly with the legend "To open—cut round dotted line", on each side. On the back was scrawled "At Home—Thursdays".

* * *

ONSLOW BARTLETT'S exciting new trials special nears completion. The performance of the twin-cylinder machine will be watched with interest. Main snag at the moment is the consumption of starter-motors per start. Old-time Morganatics forward!

ONE of the more interesting items in the 1,000 Mile Rally will be Ken Wharton's appearance in a Cooper-M.G. The model appeared in various sports car races during the summer and gave a good account of itself. In the hands of the Test Maestro it will take a lot of beating.

* * *

THIS year's Measham Rally will, it is reported, include a tricky mountain section in its 180-mile route. The finish and driving tests in the well-known Auction grounds will be bigger, brighter and better even than those of last year.

* * *

LYING in Chester Royal Infirmary, Bernard Ryder has much enjoyed copies of AUTOSPORT sent to him by our Northern Editor. Ryder draws attention to a caption of a recent picture of Alberto Ascari, when it was said by us that Ascari Senr. was an Alfa-Romeo driver in the 'thirties. This should, of course, have been the 'twenties, as Signor Ascari lost his life in the first Grand Prix to be run when mechanics were no longer carried.

* * *

ALL the classic G.P.s appear again in the 1951 calendar. Switzerland's G.P. takes place earlier, on 27th May, over the fast Bremgarten circuit, Spa-Francorchamps will see the Belgian G.P. on 17th June (a touring car race is also planned there for 20th May). Our own classic, the British G.P., is booked for 14th July at Silverstone, Holland has her *Grote Prijs* the following week-end, and Italy the *Gran Premio* at Monza on 2nd September. The Czech G.P. reappears as an "International", but this time is for Formula Two, while Penya Rhin maintains its place as the season's final event on 28th October.

* * *



atomic scientists and Oriental students with cleft palates. At long last, footsore and weary we found a policeman—one of the very long thin kind, propping up a pillar in a back street. We were saved. Your policemen are wonderful . . . but all we could get was the southern equivalent of "Ee—Ah doan't raghtly knaw. Thee'd best get back t'main road an' ask someone else".

On second thoughts perhaps he was an escaping atomic scientist, in disguise.

* * *

THE Yorkshire S.C.C. has given a lead in deciding not to include any more races for Trials Specials. I think the decision will be applauded by most people except the drivers themselves who dearly love a bit of a dice. But the cars were not meant to go racing and are quite unsuited for the purpose. Cornering at speed is a matter of brute force and Webster's Dictionary—and they don't really go fast enough to make a spectacle.

* * *

FOOD on the road is one of the more dismal aspects of AUTOSPORT (whether spelt with a capital A or a small one). As far as I am concerned, the matter has been brought into sharp relief lately by a number of hurried evening journeys back to Merseyside from places 150 miles or more away. Unless one goes to the largest town—there may not be one—chooses the largest hotel, and spends vast sums of money and time, it seems almost impossible to pick up a decent meal. Most of the pubs appear to be swamped by coaches and sell so much beer they can't be bothered to sell food. As "tourism" is now supposed to be one of our major industries, and we hope to attract a lot of foreign visitors, the subject is serious, to more than a few homing sportsmen. The only places where I have struck lucky, are the "Swan" at Whitchurch and a curious little kiosk on the shores of the lake at Ellesmere, specializing in remarkably succulent hot bacon sandwiches and coffee.

Even at the biggest hotels, one sometimes gets very cavalier treatment. Under a roof carrying as many stars as a retired general, hungry observers and competitors in a recent event were refused tea at 5 o'clock in the afternoon. Turning to alcohol for solace, they were told that the bar would not be open until 7 o'clock. It is only necessary to add that the caravanserai in question was serving as week-end headquarters for an important gathering, and was fully booked up for the occasion. Most of the refusees were resident, and the hotel must have taken many hundreds of pounds in the dead season as a result of their visit.

* * *

ARISING out of all these "XYZ" Specials, I notice that an esteemed contemporary is displeased with the widespread use of initials for motor-car nomenclature. I can't see why, personally, especially as well-known makes are included under the cloud. Taken to its logical conclusion "me learned friend's" argument is self-destroying. Pity a poor commentator trying to say "Here comes the ex-Cholmondeley-Featherstonhaugh Fabrica Italiana Automobili Torino hotly pursued by a Bayerische Motoren Werke—sorry, they've gone now".

Then among other practical difficulties consider, for instance, that the famous M.G. initials don't "stand for" anything at all. The Company is the M.G. Car Co. Ltd., and not the "Morris Garages", although it sprang from that root. Admittedly there is a good deal to be said for conferment of a real name, but most of us up here in the home of Specials know what individual initials stand for. Then there are such things as our easily identified Buttercup. Some of our more hirsute sportsmen would look remarkably out of place driving a Pansy or a Rose, and some names are just as mystifying as initials. Take the Amvac on which the Pannel ménage is lavishing so much work. The name suggests a Thermos Flask if anything, but actually the Am. represents Amilcar, and the Ac. is an A.C. engine. The V. means Vintage. So there.

* * *

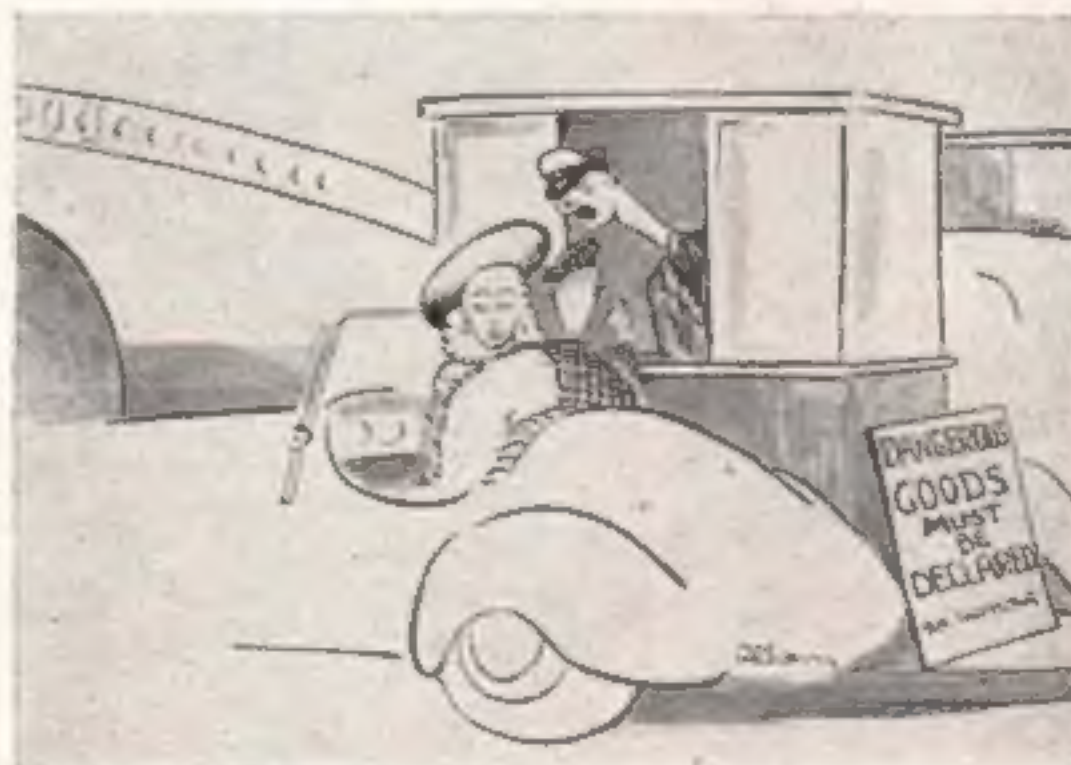
TALKING of racing, my worry of a few weeks ago about the White Riley was unfounded. The famous car is now owned by Dennis Done of Chester and is being put into full regulation sports car racing trim. All being well it should appear in next year's meetings.

* * *

THE Mersey Tunnel is a constant source of satisfaction to thousands of motorists seeking sport, business—or merely their homes and slippers. From time to time, it is also a prolific breeding ground of irritation and even bewilderment as queues built up at the pay gates and the allocation of the various traffic lanes varies to suit the needs of rush hours. Competitors in the 1,000 Mile Rally who are strangers to Merseyside may have the opportunity of sampling the tunnel's moods. We wish them a non-stop run in the so-called "Fast" lane.

A new notice has recently appeared at all entrances to the effect that "Dangerous Goods Must Be Declared". Who or what these goods may be is not apparent, and none of our friends make a habit of carrying fissionable material, so the full force of the order has not yet made any impact.

But—you never know!



Night Trial

by BARCLAY INGLIS

RECORD ENTRY, IDEAL WEATHER, OUTSTANDING PERFORMANCES AND MUCH AMUSEMENT MARK HANTS AND BERKS NIGHT NAVIGATION RALLY, 73 FINISH OUT OF 90 STARTERS

EACH year the October full moon looks down upon a sort of motoring "Helzapoppin", an outbreak of that fantastic type of lunacy which, presented with matter-of-fact realism, leaves the victim wondering whether perhaps it is his own reason which has snapped. This year's outburst occurred on the night of 21-22 October, when the Hants and Berks M.C. Annual Night Navigation Rally attracted a record entry of 96 cars.

Suitable for the "ordinary" car and devoid of tough trials-type sections (despite AUTOSPORT's mistaken suggestion to the contrary last week—ED.), these events are described as nocturnal tests of driving, map-reading and navigation. Forearmed with a 1-in. Ordnance map, torches and rubber boots, competitors are issued at the start with a route card bearing the six-figure map references of the ten control points. A brief descriptive title appended to each purports to offer a clue to the location or nature of the control but in practice tends to increase the enigma. Cars are dispatched at intervals, one to each control point, half the entry travelling clockwise, half anti-clockwise, round the route. Competitors are required to make their way from

point to point in a prescribed order, find the marshals and have each time of arrival and departure entered on the route card. The competitor who finds all points, and completes the course in the least time is the winner, the results of a special test held at one of the controls during the night being used to decide ties.

On this occasion the start and finish were at the excellent "Saddler's Arms" on the Sutton-Scotney by-pass, the route covered something over 100 miles in the Winchester-Andover-Kingsclere-Basingstoke area, and the clues to the points were Silverstone landmarks such as Chapel, Hangar, Pits, etc. A brief description of each may serve to enlighten the uninitiated and will almost certainly leave him wondering why nearly 400 adults chose this in preference to a night's sleep.

Let us begin with Club, which the map reference showed to be a blob of water named Throc-mere near the intersection of the county boundary of Berkshire, Hampshire and Wiltshire. Winding lanes led to a track where competitors parked their cars and proceeded on foot to search a field containing, sure enough, a stretch of water. Somewhat later,

they discovered this to be a natural decoy, and an almost impenetrable thicket nearby proved to be Throc-mere, dried out since the last survey. In the middle was to be found the High Sherriff's Club, where those of Hants and Berks, in full regalia, awaited the arrival of that of Wilts, in an atmosphere raised to an appropriate height by such mural ornaments as old fish, cheese and army socks. Competitors were signed in and out with fitting ceremony.

Timing Box was in a grove of pollarded beeches, studded with lights and liberally placarded, where a Botanical Research Station had been established. Specimens were variously labelled "Clacton Beech", "Ostrasisal Grass (for cutting in October and November)", "Dead Beet", "Hollianthus Ubirquitous (Holly Bush)", "Deadly Night-shirt", "Foold Yew". A copy of the ABC was surmounted by a notice "Haughty Culture", while the planting of electric light bulbs was seen to have yielded a fine crop of standard lamps. The point was named after an exhibit where a research worker, stop-watch in hand, was timing the growth of a box hedge, the results down the ages being plotted with explanatory footnotes on, successively, stone, bark, papyrus and graph paper. The cries of owls echoed round and finally led to the marshal, concealed in the branches of a "Hantsome Box Tree". It was at this point that Eric Thompson and Robin Richards, attempting an unorthodox and uncharted approach through a spinney, had the misfortune to break a track rod on a tree stump. However, within the hour a breakdown wagon removed the car, and driver and navigator spent the rest of the night touring the route as passengers of a Travelling Marshal.

Pits was found to be a rifle range in a natural amphitheatre near Kingsclere, requiring a long, or precipitous, approach on foot. Notices warning "National Uranium Board: Keep Out" diverted competitors towards the target pit, transformed for the occasion into "Shinwell's Cosy Uranium Mine (Why wait years for a house)" where, beneath his Cossack



For what we are about to receive, may Heaven help us! A group of victims at the start of the Hants and Berks Night Navigation Trial.



(Above). The diabolical flying machine "Blearieyed Wipet Mark II", which competitors were forced to board at "Hangar".



(Left). Holland Birkett with the star turn—a tramp who turned out to be a marshal.

The flicker of firelight caught the eye at Copse, where an ill-kempt tramp was found frying his supper. Indignantly professing total ignorance of night trials, marshals or anything else, he was no help at all but contrived to decoy search parties from the marshals hidden, exactly on the map reference, in a neighbouring copse.

At Woodcote—a cottage in a wood—the clanging of a bell and the ventriloquial song of a nightingale had the victims searching high and low before they were horrified by a green-faced apparition leering at them from the rafters. Marshals' friends (which it appears they have) mingled with the seekers and contributed irrelevant, if not deceptive observations.

On Farley Mount, near Hursley, Maggotts was located in a monument to a horse, dead these two hundred years and more. (But yes: a monument to a hunter erected in 1743 by its owner.) Ron Barker, who had found, and was marshalling the point, added colour to the control by parking close at hand his lovely 1909 Napier, bearing a notice "Back in 20 minutes". The ghost of the horse was acted by Holland Birkett's black Alsatian, Freddie.

Hangar was the type of building its name suggested. In it, competitors' torches revealed a marshal sprawled on a straw bale—found, on closer inspection (and to the accompaniment of an explosion) to be stuffed. In another corner, Denis Jenkinson signed route cards and directed visitors to a most realistic aeroplane on the edge of the field. To be signed out, the bewildered competitor was forced to fit himself into the rear cockpit. A whirr of machinery rose to a high-pitched whine and suddenly the aircraft shot forward, with immense initial acceleration, to taxi 100 yards into the night. (It was, in fact, attached by a long cable to an unlit car in mid-field, the sound of whose engine was drowned by the whine.) It must have been an unnerving experience.

The remaining point was placarded as the Registered Orifice of Thos. A. Beckett and Descendants, Rice Polishers and Taxidermists (9d. per mile). Here, in perhaps the most elaborate and certainly the craziest set-up of all, a popular fallacy was exploded. Rice,

(continued overleaf)

of cards with twice the usual number of aces, or dubious bottles of gin and whisky. The gamekeeper's vermin board outside the building was labelled "Prime Poultry—17s. 6d. per pound", but with "Prime" deleted and the price reduced to 5s.

The special test, pre-announced as "a hoop of golf", was located at Stowe. It was explained to competitors that, to make things easier for them, they would use not a golf-club but a hockey-stick, not a little hole but a hoop, a larger ball and, to save them tedious walking, their cars, while time, not strokes, would be counted. There were two hoops on a piece of uneven ground bounded by trees. The driver was required to negotiate the ball through the first of these, whereafter the passenger, leaning out of his window, had to stow it in the second. The despairing instructions of passenger to driver, the spectacle of the ball suddenly bouncing from darkness into the glow of the headlights, the mounting hysteria when the ball was bunkered in a tree-root, all served to entertain the marshals and waiting competitors throughout the night. Against a permissible maximum of five minutes, the Best Time of the Night was recorded by A. V. Burnard (V.S.C.C.) in his Singer 9—the remarkable one of 40.6 secs. Next fastest were R. P. N. Stark (Velox) and T. C. Sanders (Lagonda), both Vintage members, with 53.4 and 63.4 secs, respectively.

hat and behind a repellent beard, Joe Lowrey was discovered in command.

At Chapel, a derelict building of that type near Winslade, Julian Jane and colleagues were to be found operating a black market. Side-whiskers, padded shoulders, patent leather shoes and a furtive air prepared competitors for the imperturbable, persuasive monologues which offered them wads of coupons for soap, clothing and petrol, tattered nylons at "thirty-five bob a pair, Guv'nor, strite from Paris—'ere you are, two pair for three nicker", packs

Night Trial—continued

it appeared, is not grown in China but is manufactured by a most complex process by Becketts. Dozens of notices led participants to the various buildings in which mouldered an assortment of machinery, and each arrival was treated as an applicant for employment, being interviewed and put through several aptitude tests, such as cracking Pig Rice (the raw material), polishing a grain of the product in a rice Vice, operating the Forge (where the wages are made) or starting the Coliseptoscopic Brimbling Machine, printed instructions for which included priming the friscalator and a warning not to exceed 4,000 evolutions per minute. Permanent personnel included Phil Attlee—Stamp Dealer, and various Hornswogglers—one of the two Anglo-Saxon terms for a foreman, the other being unprintable. And so on.

These lunatic histrionics must not

be permitted to obscure the searching nature of this night-long test of driving and navigating abilities, and great credit is due to the winner R. P. N. Stark, who incurred penalties to the astonishingly small total of 21 marks—i.e. 21 minutes behind the standard time allowance for the route. No previous similar event has produced so nearly a clean sheet and, indeed, all twenty award winners returned outstandingly good scores. First-class weather, food and entertainment sum up an event which may strike the uninitiated as crazy but has nevertheless won a big following among lovers of motor sport.

(Right). N. England consults his map before the start.

(Below). A small section of victims and victimizers before the customers set out on their nocturnal frolic. Any resemblance to living persons is intentional.



Earls Court Commentary

ROUND THE STANDS WITH JOHN BOLSTER

"Où est la B.R.M.?" How tired I got of hearing that question, asked in various languages, at Earls Court! I explained patiently that such a car could not be exhibited, under the rules of the S.M.M. and T. "Formidable!" said my friends, with that particular shrug of the shoulders that implies that the English, of course, are mad.

It was also pointed out that the reputation of British cars has gone up by leaps and bounds, as a result of the racing successes of the Coopers and H.W.M.s. If we wanted to export our cars, surely these splendid ambassadors should find a place? Well, John Cooper was the obvious chap to answer that one, and so I put it to him when we were lunching together on the first day of the Show.

He explained, straight away, that he had tried everything possible to get his cars into the exhibition, but the rules of the S.M.M. and T. excluded them. The capital and production of his firm, it appeared, were not large enough; it was perfectly true that foreign concerns of even smaller size were allowed in, but that was different. John therefore arranged for a large coachbuilder to make a body on one of his chassis, but it was politely intimated that this exhibitor would be out next year if he put a Cooper on his stand. An accessory manufacturer, who wanted to hang his wares on a Cooper up in the gallery, was told that it would be very naughty indeed, and thus the "Alfa-Romeo of Grand Prix Formula Three" was excluded.

Our foreign friends, who wanted a close-up of a real racer, were thus forced to go and admire the beautiful little Simca-Gordini, but at £7,126 each, I don't suppose they bought many.

Before I leave this painful subject, I wish to make it perfectly clear that I am not criticizing the S.M.M. and T. for sticking to their rules. I am merely respectfully inviting this august body to bring them up to date pretty quick.

The Show was particularly interesting this year, because certain trends are becoming very clear. First

of all, it is obvious that the side-valve engine is virtually dead. It is, one admits, taking an unconscionable time a-dying, but the writing is now on the wall for all to see. No British manufacturer now produces an entire range of L-headed cars, and even the most die-hard protagonists of this type of motor are making overhead valve models. The Sunbeam-Talbot marks the first essay of the Rootes Group in this direction, and the exciting new o.h.v. Fords just about clinch the matter.

it is not so necessary for their large engines to be efficient as it is for those of European size, but the mounting weight of their increasingly elaborate cars begins to encourage a less lazy form of power plant. I got very excited on the Kaiser stand, because they had written "Supersonic" on their cylinder heads, but when you call your car "The Henry J.", I suppose anything goes.

One of the principal reasons for the o.h.v. boom is the virtually universal use of thin-wall bearings.



The Zephyr-Six Ford is one of the most interesting of the 1951 cars. Its o.h.v. engine has the bore slightly larger than the stroke, and the i.f.s. comprises cleverly designed helical-cum-telescopic damper units.

Admittedly, two of the Morris best-sellers still have side-valve power units, and I asked Alec Issigonis, their chief engineer, about this. He frankly still prefers the lightly-stressed inefficient engine for the ordinary, everyday motor car, and he has certainly one of the finest brains in the industry. Nevertheless, I hope he will soon fall into line, and give us a lively, valve-in-head motor in his delightful Morris Minor.

The Americans are lagging behind in this matter, and some of their biggest producers are still firmly wedded to the old flat-head jobs. Even there, though, several new engines have valves up top, which proves that the trend does exist. Naturally,

There is no doubt that these steel backed shells allow the ordinary production engine to be more highly stressed than did the old babitted rods. Bearing trouble is practically unknown these days, although most of us drive our little cars disgracefully hard, and therefore there is no harm in using a valve location which does not artificially restrict the performance.

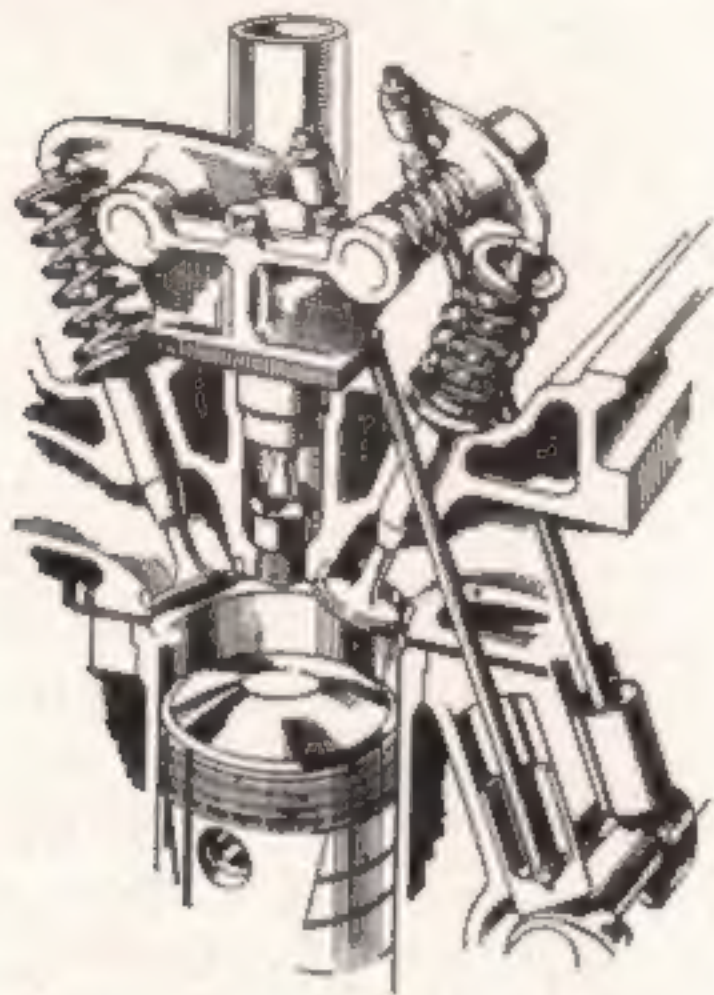
After examining the cars at Earls Court, I am convinced that we are moving towards the general use of the hemispherical head with inclined valves. We may be cursed for many years with low octane fuel, and this layout does allow the highest possible

(continued overleaf)

Earls Court Commentary—continued

compression ratio to be used. It is universally employed on racing cars because of its good breathing, and it solves a lot of cooling problems, too.

I particularly liked the valve operation of the Type 203 Peugeot, in which a single camshaft in the crank case operates all the valves. Inclined



Sloping push-rods on the Type 203 Peugeot, arranged to give a hemispherical combustion space shape.

push-rods between the cylinders operate one set of valves through rockers, normal vertical rods sufficing on the camshaft side of the engine. The combustion chambers are hemispherical, and the wet cylinder liners have a larger bore than the piston stroke. Truly, this is an inspiring power unit for a cheap family saloon.

The engines used in Bristol and Frazer-Nash cars cannot have inclined push-rods, because the six cylinders are too close together. Accordingly, they have an extra set of rockers operating secondary push-rods across the head, and this proves a satisfactory, if more complicated, way of working inclined valves from a single camshaft. The little Simca-Gordini on Stand 132 had another arrangement for opening the valves of its 1,491 c.c. engine. Enormously long rockers go right across the top of the head, as on the very first Lago-Talbots. One would imagine that the inertia was pretty considerable, but

it certainly does not detract from the performance of these cars.

Lancias have used many complicated valve gears in the past, but the six-cylinder, 600 Vee-engine of the Aurelia has a relatively simple mechanism. The valves are inclined fore and aft in the heads, and so the individual rocker shafts run across the top instead of being parallel with the crankshaft. A single camshaft lives in the centre of the Vee, and the rockers have normal push-rod operation. This design would only be applicable to an engine with considerable space between the cylinders.

Rileys, who are pioneers of the inclined valve engine, still have their two high camshafts on each side of the block, with short, light push-rods acting on the rockers. The Lea Francis motor is somewhat similar, but, like the Riley, is too well known to require any description.

Twin-o.h.c. Heads

It is delightful that the twin overhead camshaft head, once reserved exclusively for Grand Prix cars, is now becoming available on several different types of production car. Alfa-Romeos use it on all their models as a matter of course, and the old troubles of noise and oiling are now far behind. The 2½-litre engine of the Lagonda, which is very similar to that of the Aston Martin, is as smooth and sweet as it could possibly be. So is the 3½-litre Jaguar unit which, like the Lagonda, has the cams acting direct on inverted pistons enclosing the valve springs. Having

kept this engine exclusively for the XK 120 two-seater during the last year, the makers have now promoted it to their lovely new saloon, the Mark VII.

As one would expect, the Lago Baby is a twin cam job, and, right at the other end of the scale, the little Panhard has hemispherical heads, the push-rod operated valves being closed by torsion bars. Several cars at the Show had light alloy heads with inserted valve seats, and this is another example of racing (and aircraft) practice coming down to the touring car.

"Square" Stroke-Bore Ratios

Most of the new engines have a "square" stroke-bore ratio, and some, including the new Ford, Fiat, Peugeot, and Cadillac models, have the bore as the larger dimension. Rigidity of construction is the keynote of modern design, and this is most easily achieved with the big bore motor. This is another feature which has been partly brought about by improved bearings, for all the while rotational speeds had to be kept down full advantage could not be taken of the larger piston area that the short-stroke unit provides.

Transmission progress is also well defined. In America, fully automatic systems are rapidly becoming universal, but there is no sign of that happening on this side of the Atlantic. There is some indication that a geared-up fourth or fifth speed may become normal practice. The short-stroke engine is not such a "slogger"



A smart two-seater Delahaye on the Type 135 M chassis. This has an o.h.v. six-cylinder engine, transverse leaf i.f.s., and Cotal-electric gearbox.

as the old long-stroke motors were, and its needs are well suited by a lowish direct drive, on which it can work up to a reasonable piston speed. It is then advantageous to have an easily engaged overdrive, to prevent fussiness and save fuel on long straights.

These two highest gears are usually much closer in ratio than the typical American overdrive. For example, the Triumph Roadster has a direct top of 4.375 to 1 and an overdrive fourth of 3.58 to 1. The 903 c.c. Lancia Ardea has a direct fourth of 5.3 and an indirect fifth speed of 4.74 to 1, and the Simca can also be had with five speeds.

Nearly all cars now have hypoid bevels to get the shaft low, and many propeller shafts have a steady bearing in the centre. Lancia and Fiat have rubber damping to cushion the drive, and Fiat additionally has a torsion bar inside the prop-shaft tube. On the Lancia Aurelia the gearbox and clutch are combined with the final drive aggregate, and the drive is



The Lancia Aurelia is unorthodox in the use of a V-6 engine, gearbox and clutch combined with final drive, and inboard rear brake drums.

eventually. It gives a light, strong, and rigid construction which is an ideal basis for modern suspension systems, though whether its advantages are available in a normally shaped open sports body has yet to be proved.

arrangement, and, most surprisingly, Delahaye espouse this system for the first time on their new 4½-litre six-cylinder model. The Allard rightly retains its amazingly effective swing axles.

This is neither the time nor the place for a long description of the new Ford design, but I would like to make one point, because I heard a lot of nonsense talked on the stands. It was being suggested that the high spring mounting was to raise the roll centre, but the spring location is entirely immaterial, and would not affect the position however high or low it was mounted. The strongest part of the body is the bulkhead behind the engine, and it is to the top of this that the Ford designers have cleverly anchored their suspension. That, and no question of geometry, has dictated the choice of spring position.

The conventional rear end is still the live-axle on semi-elliptic springs, but there are signs that this may not always be so. There were four independent layouts, and two De Dion axles, for instance, and that is highly significant. The ordinary back axle is so satisfactory that I think it will continue to be used for some time on the more mundane cars. On really high performance machines, though, I think it is in for a fairly rapid eclipse.

I was very taken with the fairly similar (in principle) arrangement that the Lagonda and Lancia Aurelia had. This gives, in effect, a modified swing axle form of geometry, and both cars also had their brakes

(continued on page 352)

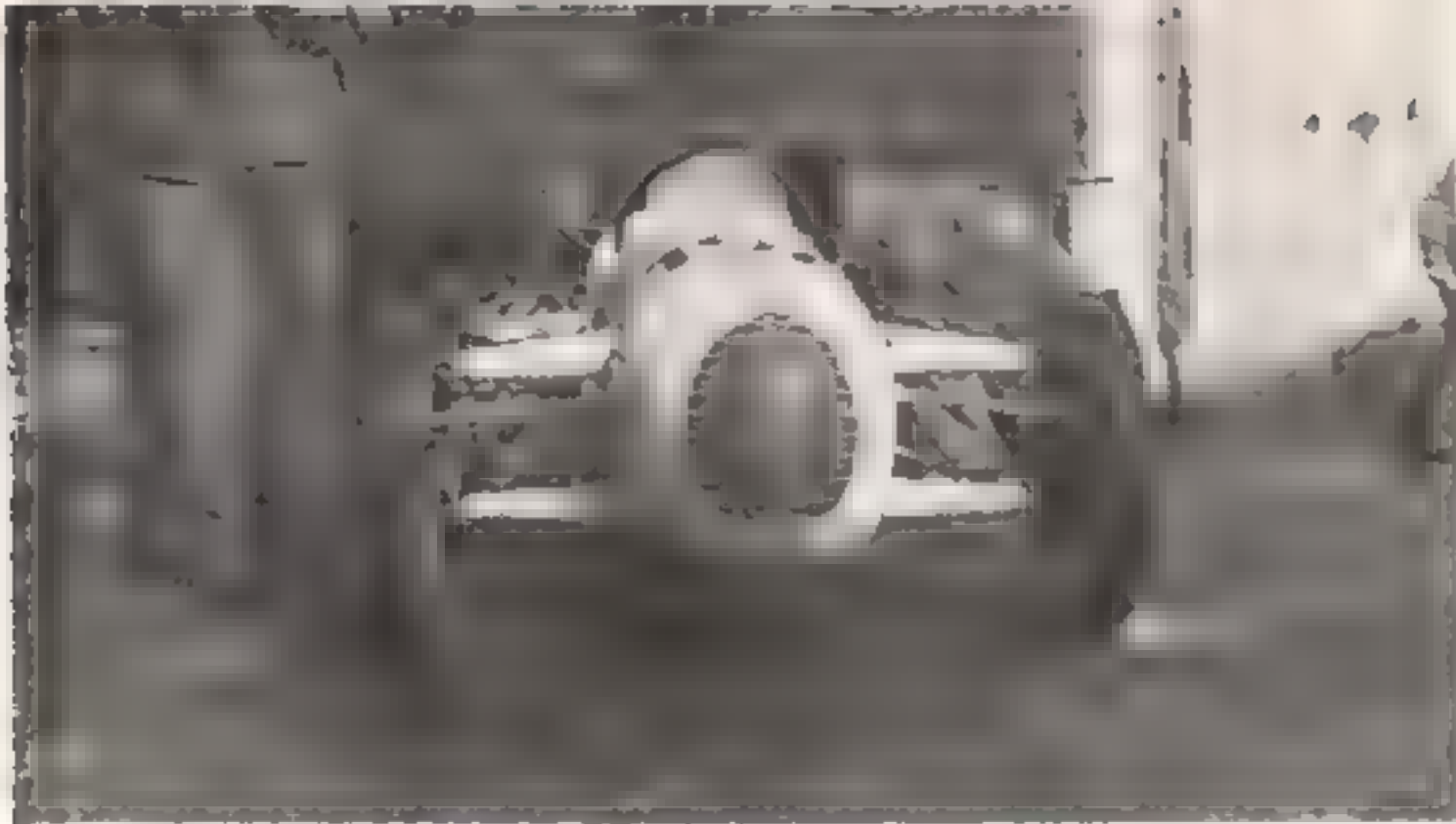


Allard was the only make at Earls Court with a "split-axle" type of i.f.s. This is the new A2 sports-tourer.

taken to the front of the layshaft, so that all the gears are indirect. An extremely low shaft line is obtained thereby, for the layshaft is several inches below the line of the hypoid pinion. The Daimler Special Sports and the Peugeot 203 keep the shaft down by having worm drive.

Still more cars this year are built within an integral steel body-cum-chassis structure, and except for small-production designs, I think all makes will be constructed that way

Only three cars at the Show had cart sprung front ends; the A.C., the 4A Singer Roadster and the Renault "Prairie" Estate Car. Of the i.f.s. systems shown, helical springs and wishbones were most often found, with torsion bars next, and a few transverse springs. Morgan and Lancia, of course, retain their own pet system wherein the stub axle slides up and down an extended king pin, against a helical spring. Vauxhall have their traditional Dubonnet



(Above). The very Cisitalia-looking Monopoletta "500", built by Polensky and raced by the American, William Lucas.



(Right). Rear-end of the Monopoletta, showing the mounting of the 45 b.h.p., flat-twin BMW motor. The car is based on the British Cooper.

(Left). Friedrich Kupfel's 750 c.c., BMW-engined S & K. has a Volkswagen chassis and is similar to the successful cars raced by Lück and Rosenhammer.

STORIES of the impending re-entry of Germany in Grand Prix racing are linked with tales of new and mysterious Mercedes-Benz cars being taken to less-used autobahnen and tested out with usual Teuton thoroughness. It is said that Germany, with a rapidly recovering motor industry, is determined to seek success in international racing in order to stimulate an ambitious export programme.

Since the Hitler war, the construction of racing cars has been mainly in the hands of either small concerns composed of personnel from pre-war racing factories, or private individuals and student groups determined to go motor racing. The earlier cars were mainly of the sports type, based on various BMW models, and Veritas actually went into production with what were more or less re-hashed "328" chassis provided with Avus-pattern aerodynamic coachwork.

Admittedly, the main successes with these cars were against other Veritas and re-worked BMWs in German national events, but occasionally a Veritas was successful in

the hands of non-German drivers in other countries. In sporting form, the cars were so fast that many were raced in Formula Two events for which they were not designed.

Since then, the Veritas concern has developed an entirely new o.h.c. engine and clever tubular frame with torsion-bar suspension and De Dion type of rear axle.

The AFM also started off as a modified BMW with a special cylinder head, but designer Alex von Falkenhausen has developed a new Formula Two car with a V-8 engine which has shown a remarkable turn of speed, but not, so far, outstanding reliability.

Of the earliest post-war "specials", the two 750 c.c., "flat-twin" BMW-powered cars raced by Lück and Rosenhammer have been widely copied. Basis of this type of machine is a tubular frame, Volkswagen trailing-link suspension units, and the BMW motor mounted transversely at the rear. Speeds of up to 120 m.p.h. have been obtained by these ultralight, air-cooled VW "750s".

The two-stroke Scampolo "500"

GERMAN

Developments in Formula Two and Formula One

Photographs by



has been developed from fairly crude prototypes constructed by students of the Recklenhausen Technical Bureau. Originally built from DKW parts, the present light machines have little other than the engines of DKW origin. A new four-cylinder car is said to be in course of construction.

L.T.E.-Brillant and Monopoletta have much in common with both Cooper and Cisitalia. They use very highly-tuned BMW racing engines, and from all accounts are Germany's fastest "500s". Lehder, designer of the L.T.E.-Brillant is also said to have ideas of using the latest NSU

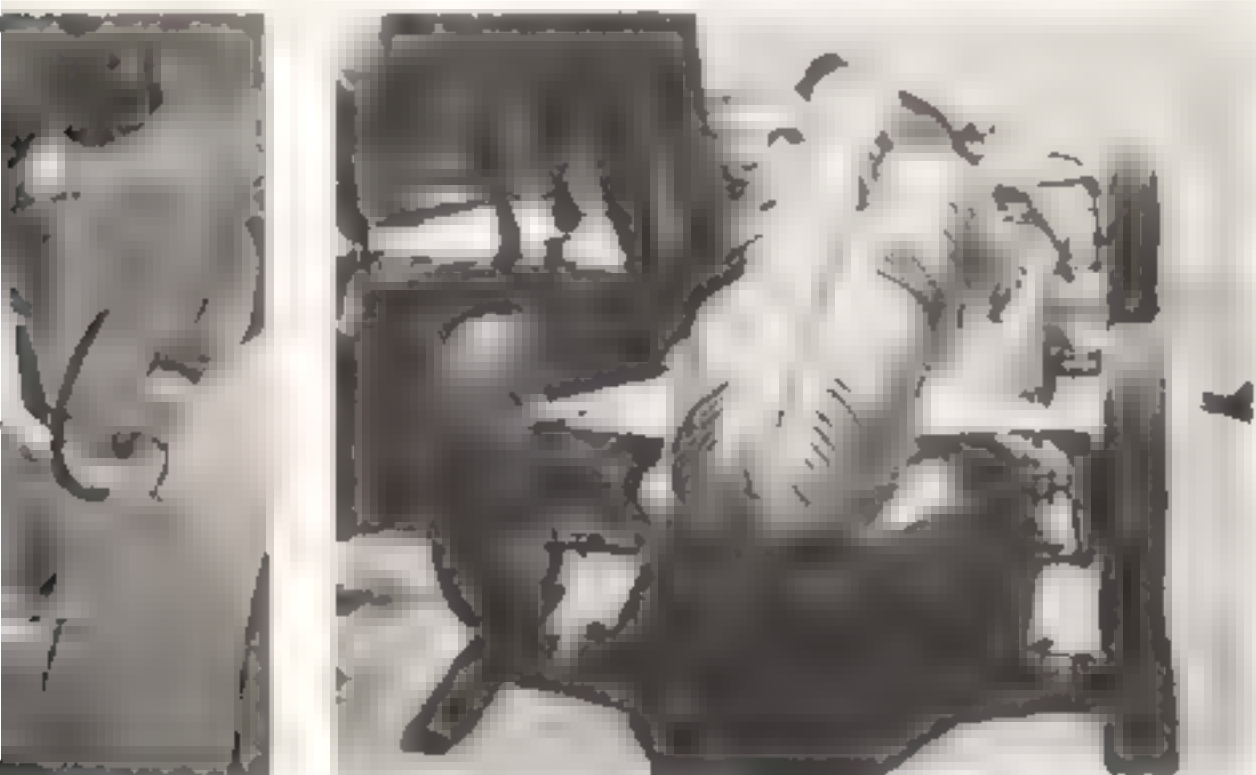


The latest sports AFM, as driven by Gustav Henning, has an "eleven-hundred" engine. It is capable of over 100 m.p.h.

CHALLENGERS

Formula Three, 750 c.c., 1,100 c.c.
Machines for International Racing

Jacques-Victor Gautier of Geneva



(Above and left). Two views of the latest 1.1 L.F. -Brillant 500 built and raced by Ferdi Lehler. It has a BMW engine.



The very latest model of the Scampolo "500" has a forward-mounted radiator and wishbone i.f.s. in place of the super-imposed transverse leaf springs formerly used. This product of the Recklenhausen Technical Bureau has a very special, water-cooled L.A.W. motor.



power-unit. Polensky of the Monopoletta set-up is known to have the assistance of several pre-war German motor-cycle men with BMW racing experience. A car named the Atlas turns out to be a completely unaltered Cooper-J.A.P., which strikes us as being curious.

A most interesting little machine is the 1,100 c.c. AFM sports car, which appeared recently at Nurburg Ring in the hands of Gustav Henning. This is reported to be the prototype of a series-production car, and is said to weigh considerably less than 10 cwt., and be capable of exceeding 100 m.p.h.

It may be some considerable time before racing-car construction in Germany can produce anything so formidable as the pre-war Grand Prix cars, and the special sports-racing BMWs, but the various machines in existence at the present time are not only ingenious, but highly promising.



(Left). The formidable 2-litre AFM with o.h.c., V-8 engine, as raced by Karl Gummann.

(Below). Pre-war M.G. exponent, Bobbie Kohlrausch with his new 750 c.c. G.V.B.





ENGLISH SUMMER. Louis Chiron coping with the situation during the cloudburst which attended the Daily Express International Trophy meeting at Silverstone this year. His car is the works-entered 4CLT 48 Maserati

ALMOST a quarter of a century ago the first Maserati car raced in the 1926 Targa Florio in Sicily, and since that time a virtually continuous series of 1,500 and 1,100 c.c. cars have carried the marque's colours in motor races the whole world over, amassing in the process successes far too numerous to detail here.

But our story starts in mid-1938, when the then current 1½-litre Maseratis, of both 4- and 6-cylinder design, were, generally speaking, inferior to the British E.R.A. and the newly introduced Type 158 Alfa-Romeo. A new 4-cylinder Maserati, with a 69 by 100 mm. engine ran in the 1938 Tripoli G.P. and in most of the small car races that followed till the season's end, although track gossip credited the Maserati firm with yet another new 4-cylinder in the design stage. This was to be powered with a 16-valved 1½-litre engine, and like many another car before it (and since too!), it was not ready that year, nor in the early part of the next. Bindo Maserati, one of the Maserati brothers, publicly stated in January, 1939, that the new machine was nearly ready and had alternative motors, with 1 or 2-stage supercharging as was necessary, depending on where the car was raced. Count Johnny Lurani, famed Italian driver and journalist, was the first to send us details and pictures of the new Maserati, which he revealed as being the long awaited 4-cylinder 16-valver, with a square engine of 78 by 78 mm., developing a nifty 210 b.h.p. and scaling 11 cwt. The engine used 2 O.H.C.s and the chassis was independent at the front only, a somewhat unexpected choice, considering the prevalent use of de Dion axles at the rear end on Formula G.P. cars. Luigi Villorosi road tested it on the local autostrada in February and was tremendously enthusiastic over the results, but clamlike as to speeds.

Consequently its race debut was eagerly awaited, and it actually took place in England of all places, when Reggie Tongue drove one in the International Trophy on

Case History of Maserati

Saturday, 6th May, 1939, just one day before the Tripoli Grand Prix, wherein a team of three works cars took part. The Brooklands episode was a surprise, but Tongue indisputably DID drive the very latest 4-cylinder 16-valve Maserati and at one time led the race for almost ten laps.

A pit stop put him back in the field, and on resuming he worked his way up to third place at 40 laps, eventually finishing behind Bira's 2.9 Maserati and Leslie Brooke (Brooke Special), an excellent performance taking into account his new car and the torrential downpour that flooded the track in the latter stages of the race.

Tripoli Fiasco

Meanwhile in North Africa, Villorosi (Gigi, not Emilio of that ilk) driving a specially streamlined new Maserati, had, during practice, touched 170 m.p.h. and lapped the 8-mile Mellaha circuit in 3 min. 14 secs., a shade above 134 m.p.h., faster than the fastest race lap. Trossi and Cortese, his team mates in the race itself, were supported by Rocco, also using the new Type 4CL machine. How the Mercedes dominated the Grand Prix is now history, and it may also be historic in one way that the complete trio of works Maseratis ALL failed to cover a single lap, Villorosi's gearbox failing, both Trossi and Cortese doing in a piston apiece! Just what happened to Rocco is not clear, but he too was a non-finisher—all told a thoroughly dreadful day for Bologna.

Shortly after this a certain English racing driver, to

wit one Johnny Wakefield, betook himself to Italy to collect one of these new machines, and on Whit Sunday (that year 28th May) he drove it for the first time. It was at Naples, in the Coppa Principessa di Piemonte, and he WON, beating a crack field of Italians, four of whom were similarly mounted, their names being Villorresi, Cortese, Taruffi and Rocco. Not satisfied with this, in his next five outings he collected 2 wins, a 2nd, a 3rd, and a fright (at the Crystal Palace) between mid-June and late August. The two victories were at Peronne and Albi, both achieved with almost contemptuous ease; the 2nd place came at Rheims when poor brakes ruined his chances; the 3rd position he earned in the Prix de Berne in Switzerland when the Alfettes upset his chance; and he had his fright when he did a "Sunny Jim" act at Stadium Dip in the final of the Crystal Palace Cup.

To complete the 1939 picture of the 4CL Maserati, the remaining Naples placings were Taruffi (2nd), Cortese (3rd), Villorresi (4th), Wakefield doing fastest lap at 65.49 m.p.h. Then at Rheims in the Coupe de la Commission Sportive Armand Hug pulled off a win, covering the 125 miles at a speed of 93.55 m.p.h., and doing fastest lap at fractionally under the hundred mark (99.33) driving

the races through 1946, 1947 and 1948 going to the cars bearing the sign of the Trident. Admittedly in 1946 the Maseratis fielded, via the semi-official Scuderia Milano, brand new cars modified and built during the war years, but their long string of victories were fully deserved and generally hard earned, for the 4CL gave the drivers a roughish ride. The full total, excluding Louveau's 1945 win in the Coupe de la Liberation, was nine races, Raymond Sommer claiming four. In chronological order these nine were Nice (Villorresi), Marseilles (Sommer), Forez (Sommer), St. Cloud (Sommer), Grandsen Lodge (Parnell on the ex-Wakefield car), Albi (Nuvolari), Nantes (Raph), Coupe du Salon (Sommer) and Penya Rhin (Pelassa, a little-known Italian), to which we can add the fastest lap five times.

South American Way

Something of a novelty was the series of winter races in South America that took place early in 1947, and in these Villorresi (with a 4CL) won two races at Buenos Aires and finished a very close second to Varzi (Alfa-Romeo) in the Rosario Grand Prix.

The 1947 European season opened at Pau, and here the 4CL ran and won, but this time it was motor-cycle ace Nello Pagani who got the winner's laurels, as well as doing the fastest lap. Jersey, inaugurating its classic road race came a month after Pau, and here the Scuderia Milano ran three cars (Chiron, Pagani and Sommer) Raymond Sommer having the only car with 2-stage

(continued overleaf)

the 16-valve

By
Norman Smith

his red and white 1938 car fitted with a new 4-cylinder 16-valve 1½-litre engine. At Albi, Reggie Tongue grabbed 2nd in both heats, and was thus 2nd in the final for the G.P., 2 mins. slower than the winner, Wakefield. Leghorn (the Coppa Ciano) was a comparative failure, Cortese coming second to an Alfa-Romeo, with Taruffi 4th, although the latter may not have been driving a 4CL. Two weeks afterwards the Pescara race was a flop for Maseratis, none of the 4CLs finishing, only Villorresi saving their name with a speed of 147.14 m.p.h. through the timed kilometre, highest registered that day. Villorresi managed to win the Targa Florio, a shadow of its former self, now run in the park in Palermo, earlier in the year on 14th May, and once again it is not clear whether the car he drove was a 4CL or the 1938 "long stroke" vehicle.

Wartime Success

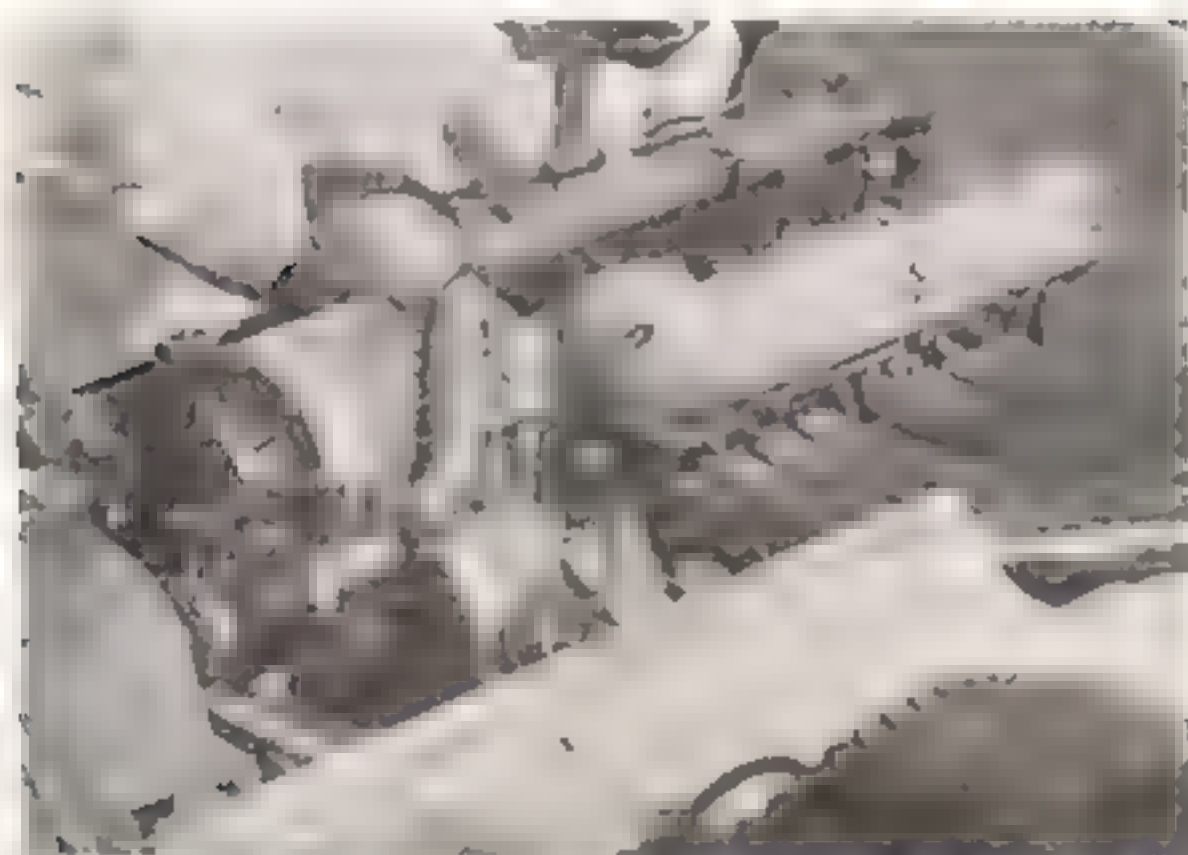
In 1940 racing was limited, quite naturally, to a few events in Italy, still then outside the war, and in both the Tripoli G.P. and the Targa Florio the 4CL performed creditably, winning the Sicilian classic, Villorresi driving, with Franco Cortese coming in 2nd. The same pair were 4th and 5th at Tripoli, Villorresi's low position being due to very slow pit work.

On the post-war resumption of motor racing the Maserati firm found their 4CL car the mainstay of the game, and when the all-conquering Alfa 158s were absent, the Bolognese concern usually won, a good 90 per cent. of



BIRD'S EYE VIEW of two 4CL Maseratis cornering in the 1947 Italian Grand Prix. Chiron takes the neater course, while Pierre Levegh skitters around the outside.

Case History of the 16-valve Maserati—continued



"SAN REMO" POWER—the 4-cylinder, 16-valve 1,496 c.c. 4CLT/48 engine, with twin o.h.c. and two-stage supercharging

supercharging. The lap scoring muddle in this race is now history, but fortunately it did not affect the race result, which was a "1-2" for Maserati, Parnell leading Chiron by a full lap at the finish, Sommer, an early retirement, lapping fastest at 91.28 m.p.h. B. Bira (with a new 1947 4CL—he used it at Jersey by the way) won the G.P. des Frontières at Chimay on 25th May in a canter, and then on 1st June Gigi Villoreti captured the Nimes Grand Prix, defeating Chiron's Talbot, mainly because Louis ran out of road when he was leading. That lion-hearted trier Sommer showed his mettle at Berne in the Swiss race, recording the day's fastest lap (97.76) in Heat 2, and splitting the Alfa team with a terrific drive in the Final, being 4th behind three Alfas, but ahead of Sanesi's car. In this event both Villoreti and Sommer used two-stage cars, and gradually the two-stage blown motor became the usual wear for Maseratis, if anything about a Maserati can be called usual, no two cars being exactly alike even to-day.

As an instance, in the Marne G.P. (6th July), still another model was introduced with a tubular chassis

(the 4CLT), handled by the young newcomer Ascari. An older model 4CL triumphed, in the hands of *independent* Christian Kautz, the sole remaining Maserati in the race as Villoreti, Sommer and Ascari had broken each other up, a thing they repeated in the Albi G.P. seven days afterwards. Villoreti atoned for his part in these disasters by two consecutive victories, one in the Nice G.P., his second in succession here, and the other at Strasbourg, where he had a scrap with Chiron and Ascari (both Maseratis) before they retired and he sailed on to victory at 68.92 m.p.h. Yet another newcomer to car racing, Dorino Serafini, winner of the 1939 Ulster Motorcycle Grand Prix, was added to the Maserati strength in the Comminges Grand Prix (St. Gaudens), but unfortunately he was the victim of an extremely curious smash, his entire steering column coming adrift at high speed, poor Serafini being seriously injured.

Little Success at Season's Close

From the remaining five races in 1947, viz. the British Empire Trophy (I.O.M.), the Italian, French, Lausanne and Salon Grands Prix, Maseratis gained but one victory at Lausanne, when a fleet of nine cars had things more or less their own way, even if Wimille's Simca did finish second, a full minute behind Villoreti who won at 63.92 m.p.h.—a speed slower than Bira's winning average in the small car race! Out of these five events Maseratis sum total was actually one 2nd (Louveau at Lyons, French G.P.), two 3rds (Ansell in the I.O.M. and de Graffenried at Lausanne) with fastest laps at Lyons, Lausanne and Montlhery.

South America again called during the 1947-48 winter and Luigi Villoreti repeated his effort of twelve months previously by winning both the Buenos Aires Grands Prix, adding a 3rd this time at Rosario before the homeward trek started, to resume normal European competition at Pau, where late in March (the 29th) Pagani proved a repeat winner, after Sommer, his car literally falling apart, retired on the last lap when leading.

Came the second Jersey road race (29th April) where four ordinary 4CLs ended up 3-4-5 (Parnell, Bira and Ansell in that order), Villoreti the anticipated winner being left on the line with a damaged gearbox, which meant his withdrawal after a very few laps. Immediately after the Channel Islands classic Giuseppe Farina,

TUBULAR TWO-STAGE—Luigi Villoreti on the 4CLT model early in 1948. Externally similar to the 4CL, this car had a tubular frame and the added potency of two-stage supercharging.





driving a new 4CLT car won the G.P. des Nations at Geneva, from the Swiss de Graffenried (4CL). A fortnight later Farina driving the same car quite easily won the Monaco Grand Prix, with de Graffenried again in a place, 3rd this time. Next the cheery Swiss driver made F.T.D. in two hill-climbs to cap his recently improved driving, Reineck-Valsenhausen and the Vue des Alpes respectively. In opposite vein we have Reg Parnell's misfortune on the very last lap of the Empire Trophy at Douglas when his 4CL ran short of petrol, due to the reserve tank failing to feed through, and he lost a race he'd already won, bar the cheering.

Enter the San Remo

At this juncture a brand new Maserati appeared on the scene, a car NOT designed by the Maserati Bros., as they had left the firm in 1947. Basically it was the 4CLT with minor modifications and fitted with a lower but wider body, a beautiful looking car which the great Nuvolari was moved to describe, after driving it at Rheims, as "the best Maserati ever". Generally referred to in motor-ing reports as the 4CLT/48 Maserati, it also became known, appropriately enough as the "San Remo" model, as it was there it raced for the first time, in the hands of Scuderia Ambrosiana aces Villorresi and Ascari. Ascari won the race and Gigi, one lap behind, was second.

Right up to date the "San Remo" Maseratis have continued to race with considerable success, although nowadays they seem to be getting beyond their best, being unable to hold the Ferraris or the Alfas, whilst even the unblown Talbots beat them in a long distance Grand Prix.

Nevertheless this particular version of the 16-valve 4-cylinder 2-stage Maserati won, between 27th June, 1948 (its debut at San Remo) and 11th June, 1950, no less than twenty-two International races. Quickly sum-

SLEEK AND PURPOSEFUL lines of the 4CLT/48 Maserati are shown to good effect in this side shot of Fred Ashmore's car

marized, in 1948 these were San Remo (Ascari), Albi (Villorresi), St. Gaudens (Villorresi), Goodwood (Parnell), Silverstone (Villorresi), and Penya Rhin (Villorresi); 1949 brought wins at Mar del Plata (Fangio), San Remo (Fangio), Pau (Fangio), Richmond Trophy (Parnell), Perpignan (Fangio), British G.P. (de Graffenried), Sweden (Bira), Albi (Fangio), Lausanne (Farina) and Goodwood (Parnell), plus three in the winter's series in South America. 1950 fell much below this with only Parnell's Richmond Trophy, Fangio's Pau Grand Prix and Chiron's Vue des Alpes hill-climb on the credit side of the ledger

The Maserati Milano

What might have proved an interesting development was the Maserati Milano, a venture sponsored by Arialdo Ruggeri, and based on the 4CLT 48 Maserati, incorporating the ideas of Ing. Speluzzi. It never came to much, however, and to-day there is, supposedly, only one left in existence of the team of three that ran at Geneva on 30th July this year.

If, as appears likely, the 16-valve 4-cylinder Maserati engine has passed its peak, it would seem feasible that those responsible for the racing activities should have in preparation another design for future races. Only time can reveal how, when and with what the honoured name of Maserati will be represented in years to come.

Whatever type or kind of car does appear it will have to be an exceptionally fine machine if it is to equal, let alone surpass the many glorious exploits of the 4CL, 4CLT and 4CLT 48 Maseratis so long familiar to the racing world

Correspondence

WE are delighted to receive letters intended for publication. We do not insist on typewritten copy, but please write in a hand we can decipher, and on one side of the note-paper. The Editor is not, of course, bound to be in agreement with opinions expressed by readers, but this does not mean that subjects will be excluded on these grounds.

* * *

THE twin-cam Norton the fastest half-litre engine. I regret I must beg to differ. Timed over the kilo at Spa, the Gilera was over 10 m.p.h. faster, while its acceleration is not a lot inferior to the shattering get-away of its pre-war blown parent. I believe the twin A.J.S. is still faster than the Norton, but is handicapped by some 80 lb. of excess avoirdupois and inferior anchors.

The Norton come-back was due to superb road-holding and high speed braking, qualities which the team's young virtuoso, Geoffrey Duke, utilized to the full. The engine b.h.p. is probably still short of the Gilera output, but none is wasted as in the case of the Italian bike, the rear suspension of which is pretty punk on bumpy surfaces. Once this is at point, the ultra-light four will take some catching in spite of the superior ability of our riders. Interesting, too, is the claim that the four-cylinder unit is lighter than the English single.

JOSEPH BAYLEY.

EAST MALLING.

* * *

HARRY SCHELL seems to have had a terrific effect on some of the reporters because of his motorless win at Goodwood; he caused John Bolster to state that he did not know the difference between a chain and an oil pipe and now I see that AUTOSPORT credits him with coasting from Madgwick to the finishing line. These Coopers are pretty good, but I did not know that the designers had managed to reduce the air resistance and friction to zero.

P. DENDY.

ROXWELL, NR. CHELMSFORD.

(Madgwick should, of course, have been Woodcote.—Ed.)

* * *

I AM at present "tinkering about" with what is basically a 31 Austin 7, trying to prepare it for trials work and would be very pleased if any AUTOSPORT readers could give me some information regarding books on the subject, especially on tuning and body-building.

Your very excellent magazine has certainly "caught on" in N.I. I wouldn't miss my weekly copy.

G. B. GASS.

FINAGHY, BELFAST.

* * *

MAY I offer my congratulations on the fine way our AUTOSPORT is now presented to us each week and the amount of space you manage to allow to northern events and those even further north.

Your Editorial of 22nd September concerning entry fees and starting money must give a deal of satisfaction to many impecunious competitors who are faced with heavy expenses in preparation of machines, transportation costs, etc., and then have to pay for driving before the paying public. May you continue to make

yourself heard in this fundamental cause. From the competitors' point of view may I say "hats off" to the excellent article of John Bolster on "Flag Wagging" in your 13th October issue.

COMISH R. HUNTER

MOTHERWELL, LANARKS.

* * *

THE I must point out an error in the article on the "Overhead Camshaft M.G.s", by Mr. P. H. Smith, A.M.I.Mech.E., in your issue of 20th October.

In it he states that the rods and pistons may be pushed up and out of the cylinders. In actual fact this is impossible, as the width across the big end bolts is greater than the bore of the cylinders. It is also impossible to remove them from the bottom as crankshaft webs and things get in the way.

The only satisfactory method is to separate the rod and piston before removal by pushing the rod up as far as possible, removing the gudgeon pin and piston from the top, and the rod out through the bottom.

M. STOTT.

DONCASTER.

* * *

I MUCH enjoyed in your issue of 13th October, John Bolster on "Flag Marshals", and again on the 20th, "Wheels". These articles are attractive, authoritative, interesting, and wise. Can we hope manufacturers will heed the advice about fitting knock-on wheels?

I have one comment. By all means build a Corps d'Elite of Flag Marshals, but pay them? Surely not? Expenses, possibly in some circumstances. Better, in my view, to preserve in motor sport opportunities for service by the great unpaid.

W. DAVID PORTER.

BISHOPS FROME, NEAR WORCESTER.

* * *

THE following may be of interest to AUTOSPORT "500" fans.

At the 440 yards "sprint" at Gosport, organized by the Southsea M.C., the 500 c.c. Manaco Norton covered the distance in 15.53 secs., average speed approximately 60 m.p.h. This has now been confirmed as the fastest "440" ever recorded by a ½-litre car in Great Britain.

The car now holds course records for every straight sprint meeting in the country with the exception of Brighton, where, despite too low gearing, it still managed to beat the 1949 record.

C. J. TIERER

BOURNEMOUTH.

* * *

NOTING your remark in AUTOSPORT of 6th October, "Always willing to oblige", prompts me to ask if John Bolster or one of your contributors could give enlightenment to a keen but ignorant reader on the subject of low pressure supercharging?

I assume there must be some pronounced disadvantages in boosters because no British car manufacturers fit them as standard, the emphasis for high efficiency engines rather being on twin and triple carburettors, and yet, I quote from "Carburettors and Fuel Systems" by Arthur W. Judge: "The difficulties in connection with the distribution of the mixture to the various cylinders, and to fuel deposition in the inlet manifold common to normal petrol engines, do not occur to the same extent with supercharged ones."

The 'raw' mixture from the carburetter is, in the latter instance, led straight to the rapidly rotating blower, where it becomes violently agitated, and at the same time heated by the compression heat effect of the supercharger. Apart from the tendency to vaporize the fuel, there is a better mixture distribution to the cylinders of the homogeneous fuel air mixture, more especially when the supercharger is between the engine and carburetter.

"It is often found that even with a small blower, so small that the supercharge pressure is very little above atmospheric, the performance of an engine at low speeds is greatly improved owing to the better mixture distribution, and more uniform quality mentioned."

As regards pressures in the engine may I again quote Mr Judge.

"In practice there is a limit, in the case of unsupercharged engines, to the greatest compression ratio that can be employed, before the cylinder maximum pressures become excessive, i.e. before the weight of the engine must be increased appreciably in order to obtain the greater strength necessary to withstand these high cylinder loadings."

I may be wrong but these remarks appear to me to favour supercharging, and from my own experience fuel consumption compares favourably with similar performance unsupercharged cars.

JOHN FROST.

LUTON, BEDS.

CONGRATULATIONS ON AUTOSPORT. It seems to me just the job that enthusiasts want.

Among the many interesting features I have particularly enjoyed John Bolster's erudite expositions of matters technical and otherwise. In your first number he discussed independent suspension versus cart springs, and I have been eagerly turning to your correspondence pages to see when someone would challenge one of the statements which he made. Since none of the springing pundits has done so, there seems no alternative but to have a crack myself, although I realize that, while John disclaims being a trained engineer, he would be much more at home with a water-cooled slide rule than I. He seems to think there are two basic types of suspension, ordinary independent and cart sprung. I agree with him that because the wheels tend to lean the wrong way, ordinary independently sprung cars tend to be slower around sharpish corners than those with the better type of cart springs. In my opinion, John ignored what I believe to be the only basic development in front suspension for fast cornering in the last twenty years. I refer of course to the now established method of applying a hack-saw to the centre of a normal front axle and hinging it. This method has been used by a lot of people, but I believe the Allard is the only or principal manufacturer to have refined this type of suspension and used it on production cars. With this system the wheels cannot lean the wrong way and it has this advantage of the cart springs plus the ordinary advantages of independent suspension.

In writing his article, I can only conclude John either had not driven an Allard or had a spot of mental aberration otherwise he would have surely placed suspensions in order of merit for proceeding around sharpish corners at smartish paces as follows: (1) Independent swing axle. (2) Well designed cart springs. (3) Ordinary independently sprung weapons.

It is extraordinary what a prejudice there has been against swing axles. I remember someone asked a question about them at a Rembrandt Brains trust and after the assembled experts had explained why they thought they were not very good, I ventured to ask which of them had tried a car with swing axle i.f.s. and the only one who admitted that he had any practical experience and who had not previously spoken, was Leslie Johnson and he spoke highly of it. Later the experts abandoned their original theory that it was not any good and said it was O.K. up to eighty miles an hour. Then they further retreated in the face of obvious evidence and said that it would be O.K. up to 100 miles an hour, when some mysterious thing called "gyroscopic action" would throw it in a frenzy. After Sidney Allard and Tom Cole's demonstration of 130 miles an hour motoring at Le Mans, I suppose the experts will now say it is O.K. up to 140 miles an hour until some rotter goes faster, when they will retreat to further ill prepared positions. My own faith in swing axles is shown by the fact that I have seen in half both the front and rear axles of my trials car. However, the proof of the springing is in the motoring and I hereby challenge John to having a go, electrically timed, around some slowish sharpish corners with the three types of car. As I have sold my sprint Allard, I have only my elderly coupe but I should be very pleased to offer it as a lamb for the slaughter in the course of scientific research

(ahem!—or should it be mayhem?). Now then John, bring out your cart sprung weapon, lay on the timing, name the time and place and let sliding commence.

A. GODFREY IMHOF.

LONDON, W.C.1.

WITH reference to Mr Deacon's letter in your issue of 21st October, I would like to say, firstly, that racing engines, as I see it, are designed to propel vehicles to which they are fitted faster than any other; secondly, blown engines are naturally faster (look at the G.P. Formula), but a point worth mentioning is that this year in the Isle of Man T.T. races "double knocker" Nortons on atmospheric pressure did what Georg Meier never approached... and Geoff Duke was a newcomer.

Thirdly, I would like to know on what he bases his assertions that Gilera and M.V. Agustas are faster. Proof please? The actual performance figures of works machines, especially those of Bracebridge Street, appear to be very closely guarded secrets.

I would like to point out, however, that Nortons in the Motorcycling World Championship this year got the manufacturers' team prize and also won most of the fastest races, even though they had tyre trouble about mid season.

Need I mention their increasing popularity amongst the four-wheeled dicers?

M. KOUYOUMDJIAN.

PETERBOROUGH.

WITH the close of the 1950 racing season, due thanks, etc., seem to have been extended to all parties concerned for the grand programme arranged and the carrying out of events, in spite of many days of adverse weather conditions.

There is, I feel, one person who has been overlooked and it is to him, the one and only John Bolster, that I wish to refer. Having attended most meetings of the season, I feel I can express the full appreciation of all "types" for his excellent commentaries and witticisms, and on behalf of all I should just like to say—"Thank you, John—and here's to 1951".

D. M. CORDIE

GRAYS, ESSEX.

MAY I, a young motor sport enthusiast aged nineteen, offer through the medium of your excellent magazine, my services as passenger to any trials competitor as yet without one for a forthcoming trial?

Experience nil, but 100 per cent. keen.

HENRY E. SPRIGGS.

3, RAVEN'S CRESCENT, FELSTED, ESSEX.



MINIATURE FOR A MASTER. Argentina's "Ace" Grand Prix driver, Juan Manuel Fangio (centre) examines the gold model of a steering wheel presented to him by Count Bettola as a souvenir of his great performances this year.

The Overhead Camshaft M.G.s

Their Overhaul, Maintenance and Tuning

by

Philip H. Smith

A.M.I.Mech.E.



THE importance of having main and big-end bearings attended to by a competent M.G. specialist has already been stressed. For this reason, it is not proposed to give any details regarding actual running clearances in these bearings; this part of the business can safely be left to the "people who know". As regards the small-end bushes, if these are being renewed they must be reamed to size after pressing in as described last week. The gudgeon pins should be a free push fit in the bushes after finishing, and this means a diametral clearance of about .0005 in.

Later on in this series of articles, it is hoped to go into far more detail regarding modifications for increased b.h.p., including some intensive work on the connecting-rods. For the present, however, it is assumed that what is required is a nicely tuned standard engine, and in this case unless one or more of the rods show signs of having been roughly handled, their true alignment can be taken for granted, and the standard finish accepted.

Condition of the Bores

If the engine was run before dismantling, its behaviour will no doubt have given some clue as to the condition of the cylinder bores. Some points in connection with bore wear on the P type and similar engines will be useful. Firstly, it should be remembered that these engines have no thermostat control of the warming-up period, and there is inevitably a considerable running time spent in a luke-warm condition. Thus, if the car has been used for the typical town-and-back journey the bores may have suffered. Secondly, the high-revving characteristics of the engine do not make for considerable cylinder life. This is not to say that the bores are wrecked in no time at all, but it is fair to say that after 25,000 to 30,000 miles, a rebore is legitimately required.

Two symptoms which cause some owners misgivings, but which of themselves do NOT constitute evidence of a rebore being necessary are piston slap and fume expulsion from the crankcase breather. The P type engine, thriving as it does on revs, requires adequate piston clearance. This increases with use to a point where the pistons are distinctly audible when starting from cold and when pulling at low revs (which is undesirable practice anyway). Unless the slap is accompanied by excessive oil consumption, and/or loss of power it can safely be ignored. As regards breather fuming, the characteristics of the engine are such that there is a tendency to fairly high crankcase pressure, and the free exit provided from the breather may give the impression that too much fume is being emitted. Here again there is no need to worry unless the other snags aforementioned are also present. The bulkhead and its sealing rubbers are there for the purpose of preventing fumes from reaching the cockpit, and no attempt must be made to extend the breather by means of flexible tubing or other means, in a misguided effort at leading the efflux under

the car. Incidentally, if such a fitting is found on the engine it will be as well to look for signs of corrosion caused by excessive condensation, inside the engine. It is not difficult to carry out a check of the cylinder bores by the use of an internal micrometer, although of course a cylinder bore gauge is better. The point in regard to cylinder wear is that the bore at the bottom end will be about its original size, since very little wear takes place here. This diameter should be checked against the diameter just at the top of the ring travel, that is, just below the ridge which will be present right at the top of the bore.

If the difference in the two diameters does not exceed .007 in. it is not necessary to rebore on the score of wear. If the bores are damaged by scoring, or are patchy due to hot-spots caused by deposits in the water-jacket, renovation will be necessary. Slight scratches on the surface can be lapped out, and this process will be described later. For the moment we will assume that the surfaces are found in order after a most careful scrutiny with an electric light, and that wear does not exceed the .007 in. mentioned. In this case the original rings may be used again (if the oil consumption was not excessive). Having gone so far, however, the owner will no doubt prefer to fit new rings in any case, and this is certainly to be recommended. So here goes.

The Rings and Pistons

The existing rings should be removed from the pistons, and if any carbon is present on the ends of the ring at the gap, this should be scraped off. The ring is then inserted in the cylinder bore at the very top, that is, above the wear ridge, and the gap measured with a feeler gauge. The gap should not exceed about .008 in. If it does it indicates that the ring itself has worn. In any case, however, the gap will obviously be too large when it is operating in the worn part of the bore, and in addition some of the ring tension will have gone, so that this test is mainly a matter of interest.

Having removed all the rings, the pistons must be thoroughly cleaned inside and out. The ring grooves can be cleared with a piece of broken ring held in a file handle, but extreme care must be taken not to score the aluminium when using this useful weapon. The piston crown and interior can be scoured in a mild way with a wire brush, but this must be kept clear of the ring lands and skirt. The former are particularly important, as on the perfection of the lands depends the gas-tightness of the rings. So be careful to avoid scratching. The drain-holes, if any, in and below the oil-control ring can be cleaned with a twist-drill of the right size held in the hand.

Autosport

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£975 Allard Competition Model 2-seater fitted Columbia 2-speed rear axle, twin carburetors. Offenhauser manifold, etc. Radio. All-weather equipment. First registered October, 1949. Mileage 1,357. Original cost almost £2,000. Tourist Trophy Garage, Farnham, Surrey. Farnham 5363.

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(continued overleaf)

Classified Advertisements—continued

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E.R.A. 2-litre engine, brand new and unused. Would make ideal Formula Two engine. This could be supplied with 4 CL Maserati chassis.

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LANCIA Lambda. 7th series. Torpedo saloon. £150. Searle, 90 Brighton Road, Banstead, Surrey. Burgh Heath 1520.

ROLLS 20. 1924. Barker saloon. £160. Searle, 90 Brighton Road, Banstead, Surrey. Burgh Heath 1520.

MORRIS Oxford tourer, 1927, new tyres, hood, battery and pistons. £50. Searle, 90 Brighton Road, Banstead, Surrey. Burgh Heath 1520.

1923 3-litre Sunbeam, rebuilt and registered 1949. Shortened chassis. Lowered bonnet. Very good tyres, £10 tax. Photo supplied on demand. £160. J. Panton, Wych Elms, Bishop's Waltham, Southampton.

MISCELLANEOUS

EXCHANGE for Sports Car, 5-in. gauge coal-fired passenger hauling 4-4-0 loco and tender "Maid of Kent", as described in *Model Engineer*. New condition, having had test runs only. Copper boiler tested 250 lbs. Joy's valve gear, usual fittings, tender brakes. Magnificent model capable of real hard work, value about £150. C. Arnold, 8 Homestead Way, Northampton. Tel. 5001.

BUILD an Arc Welder (A.C. Mains). Simple plans and easy to follow instructions. 5/6. Discon, Peterborough Rd., Farat, Peterborough.

FORD Mercury engines. Reconditioned and unused over bored and stroked 4½-litre new Arden O.H.V. conversions for Mercury. £55; £125; £160. R. R. Jackson, Petersham Yard, Old Byfleet, Byfleet 2832.

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FORD GREYHOUND, 1933, Sports Tourer, fitted very good V8 engine. A good car, cheap to run, acceleration better than any V8 motor we have driven. £135.

750 c.c. M.G., Martlet Pistons, big crank, special rods, 50 degree overlap E.N.V. camshaft, J type head, twin S.U.s. 75 m.p.h. on Poel, Lockheed brakes. All-weather equipment. A gift at £235.

Special Builders! 1,100 c.c. Amicar chassis. Alternative axle ratios, 4 or 5:1. New tyres. G.P. Talbot body with instruments, fuel system, radiator, etc., etc. £85 or exchanges.

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HARLISS AND STOKES

Attenborough Garage, Chilwell, Nottingham.
Tel. BEESTON 55297.

Earls Court Commentary—

continued from page 335

mounted inboard. This also applied to the brakes on the Allard De Dion plot, but the big Delahaye had the drums in the normal position.

Hydraulic brakes are now universal, and, thank goodness, the drums show a tendency to increase in size. There is still far too little attention paid to cooling, however, and this is the Achilles' heel of the modern car. The two trailing shoe brakes of the new Jaguar break fresh ground, and there is every technical justification for them, as I shall explain in another article.

Speaking of Jaguars, I thought the white XK 120 was the best looking sports car in the Show; it is a thoroughbred in appearance as it certainly is in performance. The new Mark VII saloon is a lovely looking thing, too, and I was most impressed with the vast luggage space in such a compact car. Perhaps the prettiest closed job, though, was the maroon 2-door saloon mounted on a Lago Baby 2½-litre chassis, and exhibited by Saoutchik & Cie. M. Saoutchik is a nice bloke, but honesty compels me to record that he also produced the chromium-plated Delahaye. After looking at that one, I staggered away almost blinded, and was only able to revive myself by gazing at the classic beauty of the Rolls-Royce Silver Dawn.

Finally, I have splendid news for sports car customers. The Americans, who call the tune these days, have made it absolutely clear that they want proper racing wheels on all open speed models. Sidney Allard tells me that he is now fitting knock-on wire

wheels to all the J.2s that go to the States; so don't throw the old copper clouter away, chaps, you may be needing it yet.

News from the Clubs—continued

MAP READING IN HEREFORDSHIRE

D. Moon (Austin) wins H.M.C. Competition

THE Map Reading Competition organized by the Herefordshire Motor Club on the 14th October was won by D. Moon driving an Austin; second was Eric Lindsay Jones driving a Riley 1½-litre. The road ran through the best part of South Herefordshire over a course of about forty miles, the weather being first class. At the conclusion of the meeting several members carried on to Presteigne in Radnorshire to see the Vintage Car Club's Rally.

The Club is holding a Mystery Driving Competition on Sunday, 5th November, at 3 p.m., commencing at the top of Dinmore Hill which is on the main road between Hereford and Leominster.

The Herefordshire Club have been invited to compete in the Welsh Counties Car Club Rally on the 19th November and it is hoped that five or six members will be participating.

* * *

THE ROY FEDDEN TROPHY TRIAL

Bristol Club's Cotswolds Event

NOVEMBER 25th is the date of the Bristol M.C. and Light Car Club's Roy Fedden Trial in the Cotswolds. The start is at 10 a.m. from Cross Hands, Little Sodbury, Glos.

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THE BISLEY RALLY

Vintage Club's "Meet" on W.D. Land

THE Vintage S.C.C. will hold their Bisley Rally on Sunday, 26th November, over War Department land adjacent to the Mytchett-Purbright Road. Entries (for Club and associate members) are divided into four classes covering vintage and non-vintage cars of under and over 1,500 c.c., and tests will include driving, reversing and similar manoeuvres. The Rally starts at 12.30 p.m.

SEPTEMBER
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Alloy Wheel Hubs
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Brakes
Marles Steering Gear
4-Speed Motor Cycle
Gearbox
J.A.P. Engines
Aluminium Body
painted to cus-
tomers' colour



1,100 c.c. Single-
seater 7 ft. 6 in.
wheel base £799

500 c.c. Single-seater
7 ft. wheel base £580

Ditto, less engine £495

Ditto less engine and
gearbox £480

Special closed season offer £90 down

A limited number of chassis kits offered which enable the constructor to assemble a complete chassis with an ordinary kit of car tools. All components fully machined and drilled. Drawings and instructions can be followed easily by schoolboy.

"A" Main chassis and Suspension frame and G.A. Drawings. **£90**

"B" Ten sets of components including Wishbone, Brake Pedal, Steering, Front and Rear axle assemblies, etc., wheels, rims, tyres and tubes at **£21 per set**

or "C" Complete chassis outfit in one purchase **£290**

EXTRAS IF REQUIRED

J.A.P. 500 c.c. engine and Albion gearbox with all mounting plates can be supplied with chains and adjusters ready to fit chassis. **£105**

Single-seater body complete with seat and 5-gallon fuel tank. **£55**

ALL PRICES
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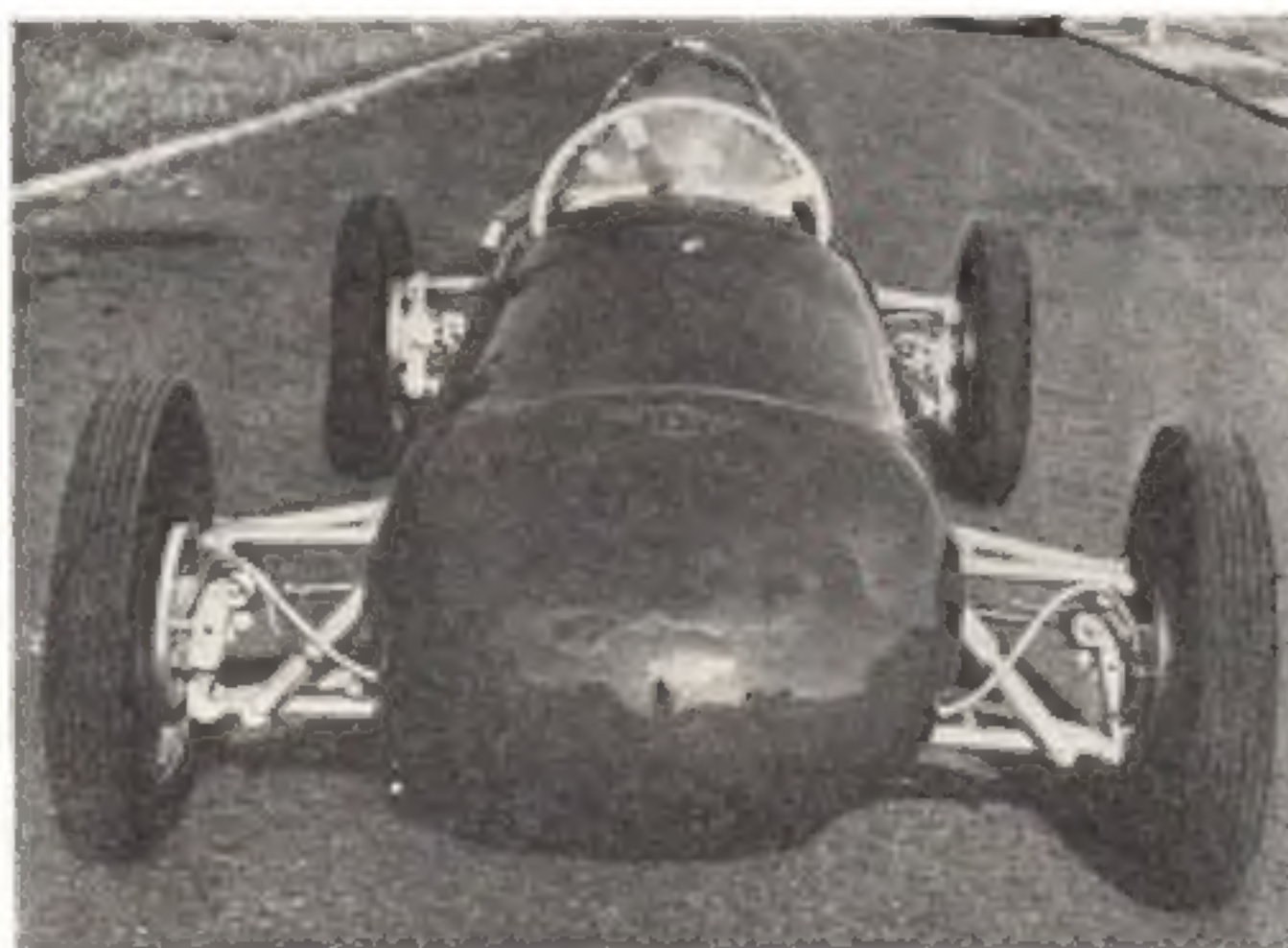


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Car Construction
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BRIDGEND
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Autosport

Photographs

THE above magnificent study of a 500 c.c. racing car at speed is typical of the carefully-chosen photographs that are used to illustrate AUTOSPORT.

We can, of course, supply prints of the majority of photographs that appear in AUTOSPORT. They can be obtained either glossy or matt finish, at prices from 4s. for an unmounted glossy print of whole-plate (8½ ins. x 6 ins.) size.

Furthermore, pictures taken by AUTOSPORT cameramen may be used in Club magazines without payment of a reproduction fee. We only ask for the usual acknowledgment of the source.

Prints should be ordered from

AUTOSPORT

**32 Great Windmill Street,
London, W.1**

Published by AUTOSPORT, 32 Great Windmill Street, London, W.1, and printed by The Alden Press, Welwyn Garden City, Herts.

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